

We claim:

1. An isolated functional derivative of an Mts protein.

2. An isolated Mts1-del175.

3. An isolated Mts1-4S.

4. An isolated multimeric Mts1 protein complex, comprising at least three Mts1 protein molecules.

5. The isolated multimeric Mts1 protein complex of claim 4, having a Mw in the range of about 30 kD to about 200 kD.

6. The isolated multimeric Mts1 protein complex of claim 4, wherein the Mts1 protein molecule is wild type.

7. The isolated multimeric Mts1 protein complex of claim 4, wherein the Mts1 protein molecule is Mts1-del175.

8. The isolated multimeric Mts1 protein complex of claim 4, wherein the Mts1 protein molecule is of a mammalian origin.

9. A pharmaceutical composition comprising the isolated functional derivative of an Mts1 protein of claim 1, and a pharmaceutically acceptable carrier.

5           10. A pharmaceutical composition comprising the isolated complex of claim 4, and a pharmaceutically acceptable carrier.

10           11. The pharmaceutical composition of claim 9 or 10, wherein said pharmaceutically acceptable carrier is liquid, semi-solid, or solid.

15           12. The pharmaceutical composition of claim 9 or 10, further comprising a neurotropic factor.

15           13. The pharmaceutical composition of claim 12, wherein said neurotropic factor is selected from the group consisting of bFGF, aFGF, CNTF, NGF, BDNF, GDNF, NT3, NT4/5, IGF-1 and IGF-II.

20           14. A method of stimulating growth of neuronal cells, comprising administering an Mts1 protein or a functional derivative thereof to said neuronal cells.

25           15. A method of treating a neurological condition in a subject, wherein said neurological condition is characterized by neuronal degeneration, death or injury, comprising administering to the subject a therapeutically effective amount of an Mts1 protein or a functional

derivative thereof and a pharmaceutically acceptable carrier.

5 16. A method of treating a neurological condition in a subject, wherein said neurological condition is characterized by neuronal degeneration, death or injury, comprising administering to the subject a therapeutically effective amount of an Mts1 protein-encoding nucleic acid sequence and a pharmaceutically acceptable carrier.

10 17. The method of claim 16, wherein said nucleic acid sequence is provided in an expression vector.

15 18. The method of claim 16, wherein said expression vector is a plasmid, retroviral, adenoviral, herpes simplex viral, adeno-associated viral, polio viral or a vaccinia vector.

20 19. The method of claims 15 or 16, wherein said neurological condition is Parkinson's disease, Alzheimer's disease, Down's Syndrome, stroke, cardiac arrest, sciatic crush, spinal cord injury, injury to sensory neurons, or degenerative disease of the retina.

25 20. The method of claim 19, further comprising administering simultaneously a neurotropic factor.

21. The method of claim 20, wherein said neurotropic factor is selected from the group consisting

of bFGF, aFGF, CNTF, NGF, BDNF, GDNF, NT3, NT4/5, IGF-1 and IGF-II.

5           22. The method of claim 19, wherein the administration is via an oral, ophthalmic nasal, topical, transdermal, intravenous, intraperitoneal, intradermal, subcutaneous or intramuscular, intracranial, intracerebral, intraspinal, intravaginal, intrauterine, or rectal route.

10           23. The method of claim 19, wherein the administration is via implantation.